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Procedure #:	3.1.138
Revision #:	0
Issue Date:	6/10/13
Review Period:	2 years
Supersedes:	n/a
Last Reviewed:	6/10/13

Magnetic Devices Group Engineering Document Management Plan

Changes made in this revision:

- N/A (new revision)

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APS_1437902

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Magnetic Devices Group Engineering Document Management Plan

1 Introduction

This document sets forth group-specific guidelines for management of engineering documents and drawings consistent with the Managing APS Documents Policy ([APS 1273342](#)). The Magnetic Devices Group is required to have such a policy in place to guide their staff in the details of controlling their engineering documents under this procedure.

1.1 Related Documents

- Managing APS Documents Policy ([APS 1273342](#))
- Managing APS Engineering Documents ([APS 1423689](#))
- APS Design and Drafting Drawing Standard ([APS 1429632](#))
- [Argonne Quality Assurance Program Plan](#)

2 Repository Use and Revision Tracking for Engineering Documents

[Table 1](#), which is copied from the Managing APS Documents policy ([APS 1273342](#)), maps the valid document repositories with the workflows that are supported by each repository.

Table 1: Work Flows and Revision Tracking Capability per Repository Type

Repository	Staff-controlled / No Revision Tracking (Not a controlled document)	Staff-controlled / Revision Tracking (Not a controlled document)	Controlled Document (A formal change procedure including an approval workflow and Revision Tracking)
Group-Shared File System (GSFS)	X		
Group-Shared File System Plus a Revision Control System (RCS)		X	
ICMS		X	X (with approval thread)
Vault			X
PDMLink			X

The left column of [Table 2](#) lists the types of documents generated by the Magnetic Devices Group in its routine operation. The rest of the table gives guidance on which workflow and repository should be used for each type of document.

Table 2: Work File Repository Usage

Criteria	Staff-controlled/ No Revision Tracking	Staff-controlled / Revision Tracking		Controlled Document			Drawing must meet D&D Standard (APS 1429632)
	Group-shared File System (GSFS)	GSFS + RCS	ICMS	ICMS (with approval thread)	Vault	PDMLink	
SAFETY: Personnel Safety Related				X			X
Legacy drawings: AutoCAD	X	X			X		
Magnetic Measurements: Documentation and drawings	X	X	X				
Document/File Types							
AutoCAD					X		
Pro/E						X	X
ANSYS	X	X	X				
OPERA 2D/3D	X	X	X				
RADIA	X	X	X				
Technical Specifications	X	X		X			
DEFAULT			X	X			

Guidance: The D&D standard shall be met if checked (x). Any and all repositories are allowed if more than one check mark (x) is provided.

3 Group-shared File Systems and Revision Control Systems (RCS)

Path: /net/oxygen/edp/asd_md

Type of RCS: none

Directory Structure Guidance:

/net/oxygen/edp/asdmd/<username> (each staff member has a directory for their use)

/net/oxygen/asdmd/<username>/ansys (ANSYS results)

/net/oxygen/asdmd/magnet_design/... (results of magnet design models from OPERA 2D/3D and RADIA calculations)

/net/oxygen/edp/asdmd/mmfmf (Magnetic Measurement Facility documentation and drawings)

/net/oxygen/edp/asdmd/iddata (results of ID magnetic measurements)

/net/oxygen/edp/asdmd/suf (Superconducting Undulator Facility documentation and drawings)

/net/oxygen/edp/asdmd/scudata (results of SCU magnetic measurements)

Guidance: The directory structure will be expanded to include additional entries and subdirectories once experience of best work practice has been established.

4 Document/Drawing Requirements

Criteria	Drawing Requirements
All Drawings	Shall adhere to the APS Document Control Center (DCC) standards and the APS-U standards.
Safety-Related Systems Work For Others	Use Design & Drafting Standard for all drawings associated with these projects

5 Software Tools

Standardized software applications for certain engineering drawing requirements are listed in the table below.

Document/Drawing Type	Software Tools
3D Mechanical Modeling	Pro/E
2D Part and Assembly Drawings	Pro/E, AutoCAD
Finite Element Modeling	ANSYS
Magnet Designs	OPERA 2D/3D, RADIA, Mathematica
Technical Specifications	Microsoft Office Suite, IDL, Igor, Mathcad

6 Alias Project Naming Convention (if any)

None.

7 Alias Drawing Naming/Numbering Convention (if any)

None.

8 Group-specific EDP Collection Browse Categories

Magnetic Devices Group Categories are listed here.

- Storage Ring Magnets
 - Dipole Magnets
 - Quadrupole Magnets
 - Sextupole Magnets
 - Correction Magnets
 - Canted Undulator Magnets
- Radiation Devices
 - Undulators
 - Permanent Magnet Undulators
 - Electromagnetic Undulators
 - Superconducting Undulators
 - Wigglers
- Undulator Components
 - Permanent Magnet Blocks
 - Poles
 - Cryostat
 - Cryocooler
 - Vacuum Chamber

- Magnetizer
- Mechanical Other (motor drives, encoders, limit switches, etc.)
- Electrical Other (wiring diagrams, etc.)
- Magnetic Measurement Facility
 - Benches
 - Sensors
 - Calibrations
- Superconducting Undulator Facility
 - Benches
 - Sensors
 - Calibrations

Guidance: Additional levels may be appropriate and will be added once experience of best work practice has been established.

9 Feedback and Improvement

If you are using this procedure and have comments or suggested improvements for it, please go to the [APS Policies and Procedures Comment Form](#)* to submit your input to a Procedure Administrator. If you are reviewing this procedure in workflow, your input must be entered in the comment box when you approve or reject the procedure.

Instructions for execution-time modifications to a policy/procedure can be found in the following document: Field Modification of APS Policy/Procedure ([APS 1408152](#)).

* http://centraldocs.aps.anl.gov/comment_form.php